

Hiroshi HARA*: The status of the genus
Metanarthecium Maxim.**

原 寛*: ノギランの所属について

The genus *Metanarthecium* was established by Maximowicz in 1867 as a new genus of Melanthaceae based on *M. luteo-viride* of Japan. In 1882 Maximowicz described the second species of the genus, *M. foliatum* also from Japan, but it was transferred to the genus *Aletris* by the later botanists.

Bentham and Hooker f. in their *Genera Plantarum* 3 (1883) placed *Metanarthecium* in the tribe XVII Nartheciae of Liliaceae, but *Aletris* in the tribe II Conostyleae of Haemodoraceae. Engler in *Die natürlichen Pflanzenfamilien* II—5 (1888) regarded *Metanarthecium* as a member of Subfam. I. Melanthioideae—Helenieae, although unusual in having introrse anthers and loculicidal capsules, and *Aletris* as the type of a widely separated subfamily IX Aletroideae of Liliaceae. This treatment was followed by Krause in its second edition Bd. 15a (1930), and was also adopted by Melchior in Engler's *Syllabus der Pflanzenfamilien* 12 Aufl., Bd. II (1964). On account of the half-inferior ovary and capsule, *Aletris* was sometimes included in Amaryllidaceae (Baillon, Small, Lawrence).

On the other hand, the similarity between *Metanarthecium* and *Aletris* has also been known to many botanists. Franchet in 1896 united *Metanarthecium* with *Aletris*, but his opinion has not been supported by the subsequent botanists, and *Metanarthecium* has long been treated as an independent genus endemic to Japan. Hutchinson in 1934 and 59 regarded *Metanarthecium* as a close ally of *Narthecium*, and classified the two genera together with *Aletris* in the tribe Nartheciae. D. Sato (1942 and 49) has also pointed out that *M. luteo-viride* has 52 small chromosomes, and its karyotype cannot be distinguished from that of *A. foliata*. Recently Browne (1961) approved of Hutchinson's view from the development of their megagametophyte.

Main characters by which *Metanarthecium* has hitherto been distinguished

* Department of Botany, Faculty of Science, University of Tokyo, Hongo, Tokyo. 東京大学理学部植物学教室.

** This study was partly supported by a Grant in Aid for Fundamental Scientific Research by the Ministry of Education.

from *Aletris* are as follows: the perianth-segments are linear, and spreading or recurved at anthesis, and very shortly connate only at the base (i.e. almost free), the filaments are subulate and slightly dilated in the lower part, the style is longer, and the ovary and capsule are subsuperior, and adnate to the perianth in the basal portion. Whereas in *Aletris*, most of the species have the perianth united into a tubular or campanulate tube with short ascending segments, shorter filaments and style, and half-inferior ovary and capsule which are adhering to the lower part of the perianth-tube.

According to my observation on *Metanarthecium luteo-viride*, no essential differences between it and *Aletris* are found. The only feature characteristic to *M. luteo-viride* is that the connate portion of the perianth is much shorter as compared with that of other species of *Aletris*. However, some Asiatic species of *Aletris* show intermediate characters between the two genera. The perianth of *A. revoluta* Franch. and *A. stenoloba* Franch. of West China is said to be divided into linear segments almost to the base. Masamune in 1937 published *Aletris sumatrana* which is intermediate between *Metanarthecium* and *Aletris*, and in 1938 described a new genus *Meta-aletris*, based on *A. sumatrana* from Sumatra and *A. rigida* Stapf from Borneo. He (1937) transferred *Liriope brachyphylla* Merrill of Philippines to the genus *Metanarthecium*, but Wang et Tang (1936) treated it as belonging to the genus *Aletris*.

I had also a chance to observe *Aletris gracilis* Rendle of Eastern Himalaya. Its perianth-segments are linear, spreading and then reflexed, and its filaments

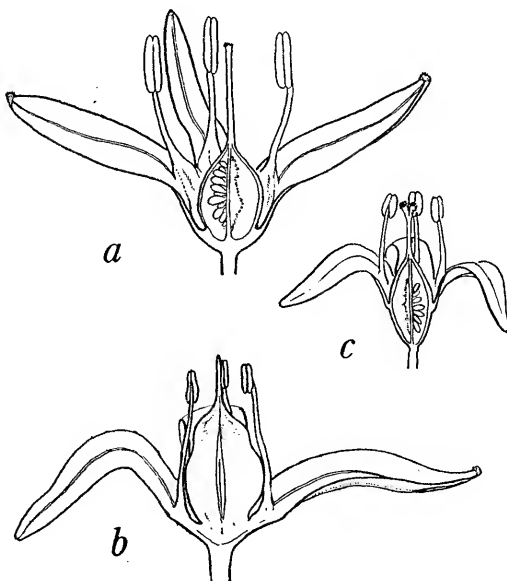


Fig. 1. Longitudinal sections of flower.
a. *Aletris luteo-viridis* from Mt. Myogi. $\times 10$. b. The same from Karuizawa. $\times 10$. c. *A. gracilis* from Siling Tzokupa near Khebang, E. Nepal. $\times 10$.

are linear, so its flowers look very much like those of *M. luteo-viride*, but the connate part of its perianth with ovary is longer than that of *M. luteo-viride* (Fig. 1, c).

The Formosan plant first named as *Metanarthecium formosanum* Hayata (1920) was transferred to the genus *Aletris*, and was later regarded as conspecific with *A. sikkimensis* Hook. f. of Himalaya by Yamamoto (1938) and Kitamura (1962).

The pollen grains of *M. luteo-viride* are also similar to those of *Aletris foliata* (Ikuse 1956).

Now the genus *Aletris* consists of about 30 species, i. e. about 25 species in East Asia with the center in West China, and 5 in eastern North America. It becomes evident that the degree of cohesion of perianth-segments and also adhesion of perianth with ovary, and the length of filaments are very variable in the genus. This fact had already been clearly pointed out by Franchet in 1896, and I agree with his opinion in uniting *Metanarthecium* with *Aletris*.

Aletris luteo-viridis (Maxim.) Franchet in Journ. de Bot. **10**: 201 (1896).

Metanarthecium luteo-viride Maxim. in Bull. Acad. Sci. St.-Petersb. **11**: 438 (1867)—Matsum., Ind. Pl. Jap. **2** (1): 207 (1905)—Miyabe et Kudo, Fl. Hokk. & Saghal. **3**: 310 (1932)—Masamune in Mem. Fac. Sci. Taihoku Univ. **11**: 551 (1934); in Sci. Rep. Kanazawa Univ. **5**: 105 (1957)—Ohwi, Fl. Jap. 285 (1953); ed. engl. 284 (1965); ed. rev. 335 (1965)—Okuyama, Col. Ill. Wild Pl. Jap. **7**: 86 (1963)—Kitamura et al., Col. Ill. Herb. Pl. Jap. **3**: 152 (1964).

M. yakumontanum Masamune in Trans. Nat. Hist. Soc. Formosa **38**: 115 (1938). Nom. Jap. Nogiran.

Distr. South Kuriles, and Japan (from Hokkaido south to Is. Yakushima of Kyushu).

The species is very variable in the size of leaves and flowers. The leaves are generally 0.8—5 cm wide, but locally 6—7 cm wide (f. *latifolium* Hayashi in Bull. For. Exper. Stat. **107**: 29, 1958). The perianth is (5) 6—8 mm long, rarely up to 11 mm long. The style varies in length by local population and is 1.2—3 mm long, and the anther is 0.7—1.5 mm long (Fig. 1, a & b).

A dwarf form with narrow leaves on mountains of Is. Yakushima was named as f. *yakusimensis* (Masamune, l. c. 551, 1934), but the similar one also occurs on Mt. Hakone and Mt. Ashitaka of middle Honshu. Another small form with nodding flowers was recorded also from mountains of Is. Yakushima (var. *nutans* Masamune in Bull. Soc. Bot. France **84**: 19, 1937).

Aletris foliata (Maxim.) Bureau et Franchet in Journ. de Bot. **5**: 156 in nota (1891); **10**: 197 (1896), sphalmate ut *foliosa*—Miyabe et Kudo in Trans. Sapporo Nat. Hist. Soc. **5**: 69 (1914); Fl. Hokk. & Saghal. **3**: 346 (1932)—Makino et Nemoto, Fl. Jap. 1246 (1925)—Wang et Tang in Bull. Fan Mem. Inst. Biol. Bot. **7**: 281 (1937)—Yamamoto in Journ. Soc. Trop. Agr. **10**: 121 (1938)—Ohwi, Il. cc. 324 & 309 (1953 & 65)—Kitamura et al., l. c. 93 (1964).

Metanartheceium foliatum Maxim. in Trautv., Regel, Maxim. et Winkl., Decas Pl. Nov. 10 (1882)—Matsum., l. c. 207 (1905).

Aletris Dickinsii Franchet in Bull. Soc. Philom. Paris ser. 7, **10**: 103 (1886).
Nom. Jap. Nebari-nogiran.

Distr. Japan (Hokkaido, Honshu, and Shikoku).

References

- Baillon, H. 1894 & 95. Histoire des plantes **12**: 590 (1894); **13**: 81 (1895).
Bentham & Hooker f. 1883. Genera plantarum **3**: 677 & 825–826. Browne, E. T. 1961. Amer. Journ. Bot. **48**: 143–147. Engler, A. 1888. Die natürl. Pfl.-familien II-5: 22 & 85. Franchet, A. 1896. Journ. de Bot. **10**: 178–180; 195–196; 197–203. Handel-Mazzetti, H. 1936. Symb. Sinic. **7**: 1219–1220. Hutchinson, J. 1934. Families of flower. plants **2**: 86; ed. 2, **2**: 596 (1959). Kitamura, S. 1962. Acta Phytotax. Geobot. **20**: 38 & 42. Krause, K. 1930. Engl. u. Pr., Die natürl. Pfl.-familien 2 Aufl., **15a**: 260 & 378. Lawrence, G. H. M. 1951. Taxonomy of vascular plants. 416–420. Masamune, G. 1937. Bull. Soc. Bot. France **84**: 18–19. — 1938. Trans. Nat. Hist. Soc. Formosa **28**: 46 & 114–115. Sato, D. 1942. Jap. Journ. Bot. **12**: 57–161. — 1947. Bot. Mag. Tokyo **60**: 31–36. Small, J. K. 1933. Manual of S.-E. flora 315–316. Wang, F. T. & Tang, T. 1936, 37 & 43. Bull. Fan Mem. Inst. Biol. **7**: 82–83 (1936); **7**: 281 (1937); n. s. **1**: 107–109 (1943). — & — 1951. Acta Phytotax. (Sinic.) **1**: 119–120. Yamamoto, Y. 1938. Journ. Soc. Trop. Agr. **10**: 121–122.

* * * *

ノギランはネバリノギランと類似点が多いが、花被はほとんど基部まで分かれ裂片は線形で平開し更に外反し、花糸と花柱は細長く、子房も上位に近いので、一般に日本特産の別属として区別されてきた。この両者は Bentham & Hooker f., Engler, Baillon などの分類では遠く離れた群又は別の科にいられているが、Franchet は同一属とし、Hutchinson はごく近縁な属とみなしている。ソクシンラン属 (*Aletris*) は北米に 5 種

ある外、現在は東亜から約25種も知られるようになり、その中にはノギランとの中間の形質を示すものもあって、正宗博士はフィリッピンにノギラン属が産することを報じ、また *Meta-alettris* という新属を建てられたこともある。ヒマラヤ東部産の *Alettris gracilis* では花は一見ノギランに非常によく似ているが、花被片は下部で癒合し子房は半上位になっている。要するにこの群では種によって花被片の癒合の程度に幅広い差があることが明らかになった。また花粉や染色体などについてもこれらを別属とする根拠はみあたらない。上記のことから私はノギランをソクシンラン属へ入れる Franchet の見解に賛成である。

ノギランについても分布が広いので色々な変異が観察され、葉や花の大きさが著しく変る以外に花が下向するものが記録され、また花柱や葯の長さも個体群によってかなり変る (Fig. a & b)。屋久島の山地に見られるような矮小形は箱根山や愛鷹山にもある。

□檜山庫三氏の逝去 檜山庫三氏 (Kôzô HIYAMA, 1905—1967) は明治38年12月12日に小石川区雑司ヶ谷町に出生。昭和42年6月1日に長逝された。心筋硬塞のため、2日ほどの間に全く急に他界された、享年61才。昭和4年に明治大学商学部を卒業されて以来、40年間という研究歴は独学により培われたものであった。昭和34年6月1日から東京都立大学講師として理学部附属牧野標本館に勤務され、牧野コレクション約40万点の



腊葉の同定に専念された。本年6月1日の逝去までにほぼ8万点を同定され、その努力は真に非凡である。牧野標本館が内外諸研究機関と対等の研究便益を頒ち合えるようになったのは、檜山氏の努力に負う所甚大である。氏の学は分類学の基礎固めに終始一貫していた。時折の成果は本誌の読者のよく御承知の通りである。この間、昭和10年12月に、同好会誌「野草」を創刊し、本年11月に通巻300号に達する。これは氏の野外植物同好会の創始、経営30年以上の成果である。アマチュアとして立ち、アマチュアの養育に尽力された檜山氏は経済的には恵まれなかったが、一生を真剣に、植物を愛し、植物と共に生きられた。だが昨春結婚されて新しい人生にふみ込まれ、新しい気持で研究に突入された矢先の不幸は、惜し

みても余りある。ここ10年間に著書数冊をまとめられたが、その主なものとして「花草木」(植物の名の話)、「植物採集」,「武蔵野植物記」,その姉妹篇「武蔵野の植物」等がある。

我々は第一級の野外植物学者を失ったが、その学燈の消えることなく輝かんことを強く強く希望する。

(水島 正美)